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A Service Catalogue for an Environmental Consulting Start-up

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Abstract

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This thesis deals with producing a service catalogue for an environmental consulting start-up. The project is divided to the following tasks: Introduction to environmental consulting, market and competitor analysis, legislation analysis, customer analysis, service catalogue and project evaluation. The aim of the research process is to get information about the services which might be possible to offer and profitable. Interviews were the principal method of acquiring information; a moderate literature review was also carried out, involving the latest online sources.

The main motivator for companies to invest in environmentally sustainable projects is complying with laws and regulations. Working as an individual consultant requires a wide range of skills and suitable personal characteristics. A consultant should have his or her own area of expertise that stands out of the competition, or a product that stands out from the mass. A major threat for a consultant is the lack of innovative services. Without innovations a consultant drifts toward mere price competition.

Despite intense competition, there is room for new small actors with specific knowledge in the environmental consulting business in Finland. Consultants can offer solutions as to how companies can improve their processes and comply with the legislation. An environmental consultant should study what the customer company is doing and invent new and better solutions that the company has not looked into. Networking with other small consultants with different kinds of expertise is beneficial.

The service catalogue was produced for an individual consultant. It is beneficial to choose only a few services and reach for high quality. The recommended services for an environmental consulting start-up are combined environmental, quality and risk management consulting services in one package for SMEs, including additional services such as responsible procurement with ERP as well as material and energy efficiency actions. Storm water management plans, water protection plans and reports related to GIS are also included in the service catalogue.

Keywords
Environmental consulting, Competitor analysis, Benchmarking, Environmental legislation, Service catalogue, Market research, Start-up, Entrepreneurship, Circular economy, Material efficiency, Reverse logistics, Blue economy, Cradle to cradle, New business models

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Dedicated to the memory of Laimi

Preface

This bachelor's thesis is done to produce a service catalogue for an environmental consulting start-up. Thesis was done without external funding and therefore it was possible to use academic freedom and concentrate on things which were most interesting and beneficial for the author. Aim is to use the results of this thesis in Ekopaja Consulting start-up, which will be launched most probably later on the year 2015.

There were many alternate topics for this thesis, but in the end service catalogue for an environmental consulting start-up was the one which raised the most interest. Starting an own company has always been a distant dream, but this thesis made it possible to be a bit closer to it. Later on we will see whether Ekopaja Consulting start-up will be successful, but what counts is to seize the opportunity and do what feels right at the moment.

I would like to thank Elizabeth SanMiguel for all the help during studies and great ideas when choosing the thesis topic. Big thanks to Minna-Maari Harmaala and Eeva Aarnio who were giving good comments and ideas how to develop this thesis. And all the participants of the thesis process and in particular the interviewees deserve great praise because without them, this thesis would have remained just a pile of meaningless papers. Finally thanks to the classmates, friends and family – Now it is the time to party!

In Helsinki in September 2015

Sami Soininen

List of abbreviations

ADB	Asian Development Bank
AfDB	African Development Bank
BAT	Best available technology
BMP	Best management practice
BREEAM	Building Research Establishment Environmental Assessment Methodology
CAD	Computer-aided design
CSR	Corporate Social Responsibility
EHS	Environmental, health and safety issues
EMAS	Eco-Management and Audit Scheme
ETL	Finnish Food and Drink Industries' Federation
EU	European Union
FIBS	Finnish Business and Society
GIS	Geographic information system
GRI	Global Reporting Initiative
IATA	International Air Transport Association
IEnvA	IATA Environmental Assessment
IFI	International Financing Institution
ISO	International standardization organization
IT	Information Technology
LCA	Life cycle analysis
LEED	Leadership in Energy and Environmental Design
NGO	Non-governmental organization
PDCA	Plan - Do - Check - Act cycle
REACH	Regulation on Registration, Evaluation, Authorisation and Restriction of Chemicals
SCM	Supply Chain Management
SEA	Strategic environmental assessment
SLA	Service Level Agreement
SME	Small and medium-sized enterprises
SMS	Sustainability management systems
TED	Technology, Entertainment, Design
UK	United Kingdom
US	United States
WWF	World Wide Fund for Nature

1 Introduction

This thesis produces a service catalogue for an environmental consulting start-up. The introduction chapter explains why the topic was chosen and what the objectives are. The project design and project tasks are illustrated in overlay matrix. International aspect, benefits and key concepts are also defined. There are also given some details about the company which will use the service catalogue.

1.1 Background

Author of this thesis has studied environmental engineering before and also worked some years in different environmental related tasks. Aim is to use the results of this thesis in Ekopaja Consulting start-up, which will be launched most probably later on the year 2015. This thesis is researching which services would be the most profitable and recommendations are given in the service catalogue.

Ekopaja Consulting will operate as a private entrepreneur, which is also known as a proprietorship. Compare to other company forms it is speedy and uncomplicated. Later if the business operations are expanding enough it is possible to change company form as a limited company. Potential customer groups are: Private sector, Public sector, Education sector and NGO's. Idea is to provide tailor made services for all the customers.

Many people are nowadays looking for jobs which are giving more meaningful tasks. Personally I feel that working in the environmental sector is highly rewarding. You can be a part of people who are working towards better future and cleaner environment. There are still many unsolved problems in the environmental sector. Areas like cleantech, renewable energy and material efficiency are getting all the time more important because resources are decreasing.

1.2 Project objective and design

The project is divided to following tasks:

1) Introduction to environmental consulting
2) Market and competitor analysis
3) Legislation analysis
4) Customer analysis
5) Service catalogue
6) Project evaluation

Objective of this thesis is to produce a service catalogue for an environmental consulting start-up. The aim is to use this service catalogue in a new company which will be founded during the year 2015. Service catalogue is given to comments and it is presented in Haaga-Helia University of Applied Sciences. After finalizing the service catalogue the project is evaluated. GANTT time chart presents the process in calendar weeks (Appendix 1.). In the overlay matrix project tasks of the thesis process are described. (Table 1.).

Table 1. Overlay matrix describing project tasks of the thesis process

	Project tasks	**Theoretical framework**	**Data analysis / Project management method**	**Results**
1.	Introduction to environmental consulting	Environmental related organizations	Secondary data (Research papers, books, articles, online sources and reports), Interviews	Chapter 2
2.	Market and competitor analysis	Market and company databases and statistics	Secondary data (Research papers, books, articles, online sources and reports),Interviews	Chapter 3
3.	Legislation analysis	EU legislation, Finnish legislation	Legislation sources, Interviews	Chapter 4
4.	Customer analysis	All potential customers	Interviews	Chapter 5
5.	Service catalogue	Own reasoned analysis	Based on the research recommendable service catalogue is produced	Chapter 6
6.	Project evaluation	Thesis	Thesis	Chapter 7

1.3 Project scope

Figure 1. presents potential thesis topics related to Environmental Consulting Start-up. After intense planning period and brainstorming with the teachers, topic was decided to be service catalogue supplemented with market research. Even though there were other potential topics, service catalogue seemed definitely the most interesting and beneficial. Also in academic standards service catalogue allows specific enough research and it is still compact enough for Bachelor's thesis.

Environmental consulting includes wide number of different services and subsectors (Appendix 2). It would be impossible to do a thesis about all of them. Therefore this thesis concentrates mainly on four types of services:

- **Environmental/ Quality/ Risk management systems**
- **Circular economy applications and material efficiency**
- **Development cooperation consulting in environmental field**
- **Other environmental project plans, studies and research services**

Also following other service fields are gone through partly, to support the core services:

- Water resources and wastewater engineering
- Waste management and recycling
- LCA, BAT's, BMP's, innovations and new technologies
- Environmental legislation services and permits
- Certification, assurance, eco labelling and CSR
- Reporting, communications, reputation management and branding
- Liability, auditing and due diligence
- Policy, permits, compliance and government relations

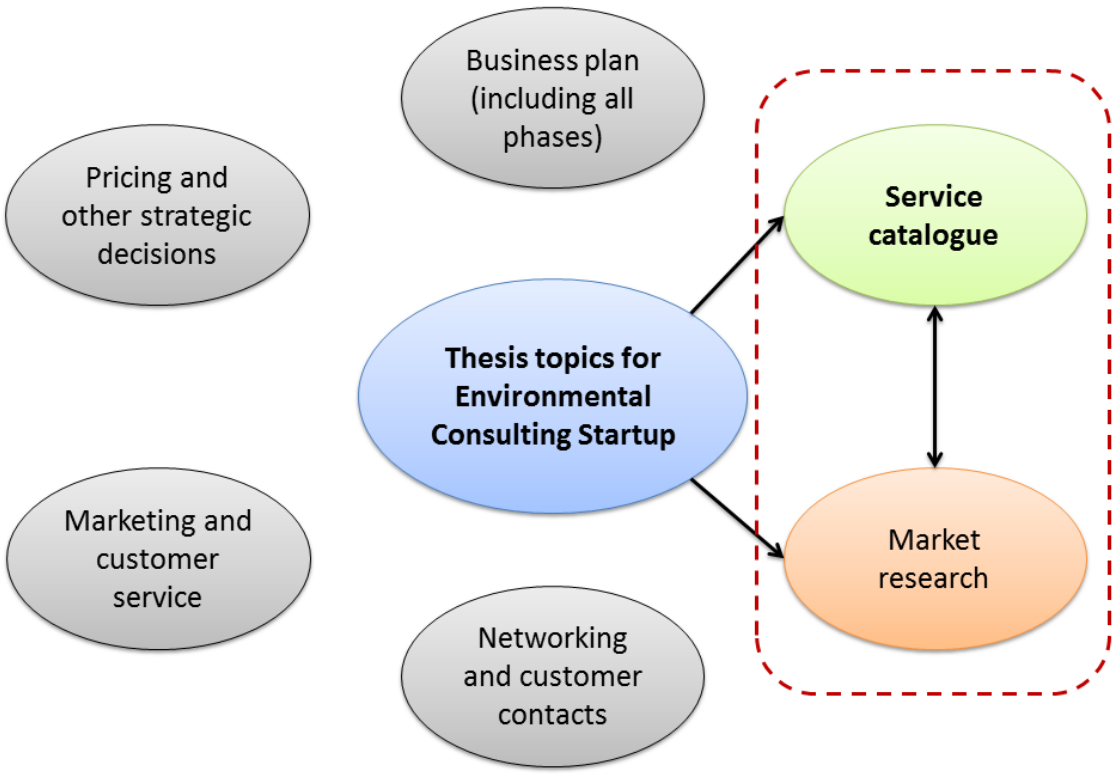

Figure 1. Project scope of this thesis

1.4 International aspect

This thesis is done under degree programme of International business in Haaga-Helia University of Applied Science. International aspect is therefore an important part of the thesis. Most of the secondary data is collected from international sources without forgetting the characteristics of Finland. In the environmental legislation analysis EU legislation is revised too.

Service catalogue is planned so that the services could be used also by international customers or in development cooperation projects. But also with domestic customers there are many international aspects especially when managing the international suppliers or other stakeholders of the companies.

1.5 Anticipated benefits

Benefit of this thesis is to produce a service catalogue for an environmental consulting start-up. Also successful use of the service catalogue by the start-up company is anticipated. This company might employ some workforce in the future and produce more benefits for the partners and potential employees. Producing thesis develops also personal career opportunities and gives valuable experience for further studies and challenges.

Besides the case company also its various stakeholders will benefit from the service catalogue. Customers will increase efficiency in their operations and get cost savings, same time they will produce less impacts to the environment. Also partners of the start-up company can benefit from more economical and ecological solutions which the service catalogue is offering.

1.6 Key concepts

Environmental consulting is according to Alter (2012, 5.): “Providing professional or expert advice regarding the environment to customers”. There are numerous possible environmental problems so the qualifications needed from the environmental consultant are very different. Typical environmental consultant services include inspections, assessments, and studies which customer does not have resources or ability to do (Alter 2012, 6.).

Competitor analysis tries to understand and analyse competitors in the same market. The main goal is to identify strengths and weaknesses of competitors, and identify the opportunities and threats what they cause to your company. (CIMA 2006, 3.)

Benchmarking evaluates constantly the best practices of best-in-class organizations. By adapting the best practices company can maximize their performance. Four stages of benchmarking are: learn from others, adapt, implement, and improve. (IMA 1995, 2.)

Environmental legislation is collection of standards that governments or EU establish to manage natural resources and environmental quality (UCAR 2015). In Finland Ministry of the Environment monitors environmental affairs with EU and is responsible of national environmental legislation. The European Union is a part of many international environmental agreements and these are binding also in Finland. (YM 2013)

Service Catalogue is a list of services that company provides to its customers. Each service within the catalogue typically includes description of the service, Service Level Agreement (SLA), cost of the service and other relevant information of the service. (Wood 2015, 2.) Service Catalogue was first used by Information Technology (IT) companies, but also other industries have adopted it. Two different concepts are used: Business Service Catalogue and Technical Service Catalogue. First one describes the service to customers and the second is used inside the company as a guidebook. (PMG 2015, 4.)

Market research is the process of gathering, analysing and estimating information about a market, about a product or service to be sold and about potential customers. Research concentrates to characteristics, spending habits, location and needs of customers, the business as a whole, and the competitors. (Entrepreneur 2014)

Circular economy is all about closing resource loops; it does imitate natural ecosystems in our society and business processes. Currently we extract resources from our planet at an increasing pace and make products that we dispose after use to landfills. Same time resources are getting more and more scarce and expensive. Circular studies how to develop products to have longer lifespan and products which can be recycled easier. One of the key ideas is to shift from owning to renting and this can produce a lot of new business opportunities. (Circular Economy 2015, Ellen MacArthur Foundation 2015)

1.7 Justification of the research methods

Data collection in this thesis was mainly done through interviews. The interview questions can be found from appendixes 3 and 4. There are two different questionnaires, one for environmental professionals and the other for potential customers. There were many reasons why interviews were chosen to be the main source. Firstly interviews offer a change to meet many different people, and these are also the people to work with in the future. It is not possible to emphasize too much the importance of networking for environmental consultant. Secondly face to face interviews offer much more information than just questionnaires made through Internet. It is possible to interact more with the interviewee and many times important issues arise outside the original questionnaire. Thirdly through interviews you can access information which is not available in books or publications.

Interviews were executed face to face, by phone or by email, a comprehensive list can be found at the end of the thesis. There were three groups of interviewees: environmental consultants, governmental environmental officials and other environmental professionals. Consultants could be further divided to independent consultants, SME's and big multinational consulting companies. Potential interviewees were contacted after analysing suitable companies and organizations.

Also the nature of environmental consulting business favours interviews as a research method. Environmental consulting is dealing with qualitative issues like personal characteristics, legislation, corporate responsibility and innovations. Interviews offer wider qualitative data to use in thesis than other research methods. In addition environmental consulting markets in Finland are not that big, so networking with the actors may give lot of working possibilities in the future. Still interviews alone are not enough to get all the research data to thesis. Therefore a moderate literature review was done to supplement research results. Literature review emphasized electronic databases and the focus was on the latest publications and the quality of the journals.

2 Introduction to environmental consulting

In this chapter specific characteristics of the environmental consulting business are gone through. Different data gathering methods are described. Main goal is to get clear view of the future possibilities of the environmental consulting business. Also needed characteristics from the environmental consultant are presented.

2.1 Methods

To get representative theory base a moderate literature review was done. Sources were gathered though electronic databases and the focus were on the latest publications and the quality of the journals. Also interviews with the environmental professional gave a lot of good information and the perspective which couldn't be learned from the literature.

2.2 Characteristics of the environmental consulting

Environmental consulting is rapidly developing and international business (Lilja 2015), and includes many special fields of business (Saaristo 2015). Knowledge from various factors is often needed and also economic and social aspect need to be taken into account (Tanskanen 2015). Environmental consulting has always link to some other industry e.g. energy production and waste water treatment (Vahanne 2015). During the last 15 years environmental consulting has differentiated as a proper field of business and the importance of environmental consulting is growing all the time (Grönlund 2015). Environmental consultants have moved from the margins and now play an integral role of designing new projects. (ENDS 2015, 6.) Environmental consulting has established its position and will be even more important in the future because there is a lot of work to be done. (Lukin 2015, Minh 2015).

Companies are nowadays more aware of the environmental problems. Environmental, health and safety (EHS) issues are now everyday life in most companies. (Phillips et al. 2013, xxi) The risk of neglecting environmental issues is getting higher in terms of damage to the reputation and getting fined or prosecuted (ENDS 2010, 16.). As a result, it is more common for private companies to go beyond the regulations in their environmental actions. (ENDS 2010, 16., Alter 2012, 7.) Motives for this can also found from marketing porpoises, but more often environmental consultants can increase companies' efficiency and save money (Alter 2012, 7.). To increase environmental awareness it needs education and persuasion. People need to know what, how and why before they are convinced

to implement environmentally sustainable projects. (Phillips et al. 2013, 24) Strength in environmental consulting is becoming more important than the technological offering (ENDS 2015, 3.).

Four key factors to motivate private companies to implement environmentally sustainable projects are (Phillips et al. 2013, xxvi):

- Comply with regulations
- Cost savings (cost control and avoidance)
- Public image
- Employee satisfaction, attraction and retention

Most of the environmental consultants' tasks in UK are done because of EU and governmental regulations and legislations as we see from the figure 2. (ESI 2015). There has been a clear change in practices among developers, regulators and financiers due to changes in the environmental legislation. (ENDS 2010, 16.)

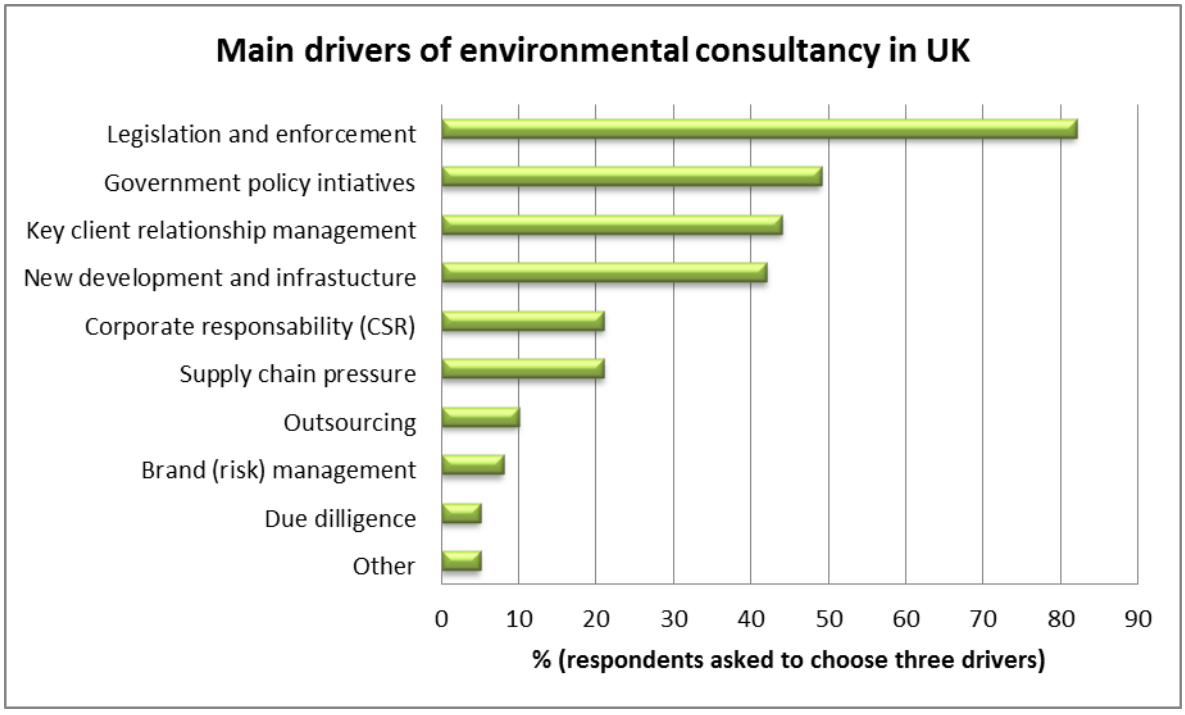

Figure 2. Main drivers of environmental consultancy in UK (ENDS 2010, 6.)

Customers of environmental consultant can be divided to three groups: private sector customers, public-sector customers and non-profit organizations (NGO's). These customers do need different services. (Alter 2012, 9.) Environmental consulting is typically focusing on rather small projects (Tyynismaa 2015). Consultant is explaining the options and the

customer company will do the final decisions (Kaivonen 2015). Most often the consultants are preparing different plans, impact and damage assessments, as well as applications for authorization (Rantakokko 2015). Also operational changes, auditing processes and benchmarking customers' performance are employing environmental consultants (Alter 2012, 7.). Cost calculations, life cycle analyses, carbon footprint calculations and other emission calculations are also big part of the work (Lukin 2015). There are different practices in different countries. For example in the US value engineering is a common practice, it aims cost savings for customers. (Minh 2015) New technological tools allow more efficient, economic and environmentally friendly solutions (Mähönen 2015).

Unfortunately the environmental sector has still many times hard to justify the benefits of their projects. Many times only short time profit is the goal of the companies. (Koski-Vähälä 2015) It is hard to involve all stakeholders to implement more sustainable policies when some executives consider environmentally sustainable projects as a waste of economic resources. (Phillips et al. 2013, xxi) The customer company of the environmental project wants to know the specific impact of the project before the decision of the investment is done. Even though there is enough data to make reliable forecasts, the evidences of the benefits must be solid. In the recent years companies have finally started to understand that the value is not just a number, but the total benefit what comes to the organization. (Phillips et al. 2013, 25)

2.3 Required characteristics and skills from environmental consultant

Environmental consulting is fast paced business and requires continuous upgrade in knowledge (Tyynismaa 2015). Environmental consultants are now needed to work in different industry areas (ENDS 2015, 6.), which need wide range of expertise (Runsten 2015). Often environment, quality and safety issues are done together and by same person (Lilja 2015). Engineering skills are not enough anymore for environmental consultants (Minh 2015, Mailammi 2015). Sales skills are vital for individual consultant and also knowledge from the legislation is important (Tyynismaa 2015, Strandberg 2015, Saaristo 2015). But in the end the most important thing is to know the substance (Saaristo 2015, Mähönen 2015, Rantakokko 2015, Levonmaa 2015), and internationally special substance knowledge is always in hard currency (Vahanne 2015).

Working as an environmental consult can be challenging, because the customer company needs to get an understanding why to buy services. With concrete examples it is easier to persuade customer. Also process thinking and leadership are in the key role. (Kylmänen

2015) It is possible to wake interest in the customer through personal encountering. Environmental awareness should be transmitted to the customer with tolerance and diplomatic manner. (Mähönen 2015) Environmental consultant needs the ability to see and read the customer's needs. Consultant should deepen the customer's view with own expertise. The ability to apply solution in the future situations is important. (Nissinen 2015) Entrepreneurship alone is variable work and the selling must not forget. Challenge is to point out direct benefits for the customers. (Törnroos 2015) It is good to visualize the processes and the problems; this also helps to explain the facts to the customers. Motivating and engaging the customers towards environmental issues are the most important tasks of the environmental consultant (Kylmänen 2015)

The environmental consulting industry needs two different kinds of professionals. First there are people who have wider and general knowledge about the issues in environmental field; these people normally take care of the project management. While others are more specialized to certain field and have deeper knowledge on it. A problem for the specialized consultants is to choose the right field of business, where is enough work in the future too. (Meriluoto 2015, Tyynismaa 2015) It is risky to specialise only to on sole area (Koski-Vähälä 2015), therefore environmental consultant should expand expertise continuously (Lilja 2015). However it is impossible to be an expert in all fields of environmental consulting (Pesonen 2015). Berninger stated that (2015): *"You should have your own thing what you know better than the rest or product which stands out from the mass".*

In order to succeed environmental consultant should dominate own specialization and also understand the big picture (Grönlund 2015). Environmental consultant should have own initiative and good project management skills (Kaivonen 2015). Openness, enthusiasm and understanding the customer are important characteristics for environmental consultant (Törnroos 2015). Environmental consultant should have good references and social skills. (Berninger 2015) Good dialogue with customer is in a key role (Lukin 2015), and negotiation skills help to get the contracts done (Pesonen 2015). Environmental consultant needs to be flexible and adaptable to the needs of the customer (Vuorinen 2015). Experience about different software like GIS is useful and can make you stand out from the others. While the environmental consulting markets are getting more international, also language skills will be more important. (Mailammi 2015) Environmental professionals do need also marketing and psychological characteristics to succeed. (Maidell-Munster 2015) For an environmental consultant it is crucial to have economic knowledge, it is useful even without being an entrepreneur (Koski-Vähälä 2015). It helps to have knowledge about technology, customer service and society (legislation, governance, politics, etc.) (Lilja 2015).

Consultants are normally pragmatic and only acquire knowledge on a need-to-know basis. The learning usually happens through collaboration with colleagues in projects. (Hojem 2012, 332) Different professional associations are offering working groups which are good way to enhance knowledge (Tyynismaa 2015). If we compare consulting and academic world: Time and cost constraints in projects make consulting engineers focus on immediate tasks (Hojem 2012, 332). Scientists on the other hand are expected to deliver detailed, well founded and peer reviewed results. (Hojem 2012, 325) In order to do collaboration between these two the consultants should identify the type of knowledge and the time when they need it (Hojem 2012, 329).

2.4 Future possibilities and threats of the environmental consulting business

Environmental consulting is developing rapidly due to social and legislative changes. This gives an opportunity for the most innovative, flexible and advanced consultants to break through. Some will diversify, while others have to adapt in order to survive. Process will lead to leaner, highly customer focused and flexible organisational structures. (ENDS 2010, 7.) It is estimated that demand from the public and private sectors will grow industry revenue in US over the next five years. Companies are looking to strengthen their reputation and reduce their carbon footprint. To capitalize this, various new consulting firms will likely enter the industry and larger firms will grow. (NewsRX 2014) It seems likely that more of what is currently done in the public sector will be done by the private sector after a few years (ENDS 2010, 7.).

Interviewees are sure that environmental consultants have a lot of work in the future. Vahanne (2015) opines that*: "Environmental consulting sector is not threatened by anything, because certain things must always do even though the customer wanted it or not".* EU and governments are putting more effort to environmental issues. Environmental issues might become obligatory to all fields of business in the future. (Lilja 2015) Also the public has become more aware of environmental issues (Minh 2015). In the future there are more and more serious environmental threats (Niinivaara 2015). Population growth will increases environmental challenges, but technological development and use of renewable energy might help the situation (Runsten 2015). Specific technological solutions are needed to develop solutions to environmental problems at least internationally (Tanskanen 2015).

Environmental consultant is operating between the environmental regulations and the customer (Määttä 2015), and therefore the future of environmental consulting depends greatly on how regulations are developing. Change of the regulations and legislation are always a chance for environmental consultants to sell their knowledge. (Saaristo 2015, Nissinen 2015) Environmental requirements will most likely increase in the future and this will create more working opportunities, mainly with SME's (Törnroos 2015). Many companies are diminishing their workforce and this increase the need of buying environmental consulting services outside the company. Possibilities are also higher prioritizing of environmental issues and growing significance of environmental brand. (Nissinen 2015) Question is how SME's will deal with their environmental issues. Generally more workers are dealing with environmental issues and internal experts are replacing external consultants. (Lilja 2015)

In the future the amount of stakeholders obliged to environmental permits might decrease in Finland. This will also reflect to the workload of environmental consultants, companies do more tasks by themselves. (Tyynismaa 2015, Mailammi 2015) According to the research made by FIBS and PwC, big companies have invested less to environmental issues during last years (Niinivaara 2015). Peltonen (2015) even states that: *"Environmental consulting might become unnecessary when companies and organizations adopt environmental efficiency and objectives*". Also complicated economic situation affects to environmental consultants (Grönlund 2015), and diminish the desire to hire outside help to the companies (Pesonen 2015). Bad economic situation is slowing down the integration of environmental issues to different parts of the company's operations and environmental issues are still mostly handled separately (Määttä 2015). In the future research funding will decrease, which may lead to the situation where many academic environmental professionals have to find a new way to employ themselves (Berninger 2015). But a major threat for a consultant is the lack of innovative services. Without innovations a consultant drifts toward mere price competition. In global markets environmental consulting giants like ERM and URS are making it harder to succeed for others (Tyynismaa 2015). Vahanne (2015) agrees when stating: *"In international projects the chances are good, however the competition is fierce".* Decreasing funds of Finland's bilateral development cooperation is a clear threat to development consulting, which is often dealing with the environmental issues. Opportunities can be found from the other donors such as the EU, World Bank and other regional banks like the ADB and AfDB. (Tanskanen 2015) Productisation is important with own services and also when improving customers products and processes (Berninger 2015). In practice it is not so simple to productise the services what environmental consultants are offering. Many services including resource efficiency is different depending on the field of the industry. (Lilja 2015)

According to Tyynismaa (2015): *"There will be always a need for environmental consultants, but maybe in different areas than today".* In the future climate change, water, energy and waste issues will employ many environmental consultants and in these areas there is a lot of undone work in many countries (Runsten 2015, Berninger 2015). Future areas of environmental consulting might also deal with green construction and product design (Alter 2012, 7.). It is good to look examples about BMP's around the world to apply in Finland (Mähönen 2015). Material and energy efficiency are some of the potential sectors in the future too (Tyynismaa 2015, Vahanne 2015, Lukin 2015). Also responsible procurement might be one of the growing sectors of environmental consulting (Törnroos 2015). Storm water management plans to public sector can be potential task for environmental consultants (Levonmaa 2015). Data modelling is a tool of the future and it would be good to know that in order to success (Grönlund 2015). Because of the changes in environmental protection laws and degrees also farmers may need help from environmental consultants (Levonmaa 2015).

In the future pressure from the big companies and clients may push SME's towards their own EMS (Niinivaara 2015). ISO 9001 and ISO 14001 standards are renewed in year 2015, so there is a good opportunity to gain knowledge and enter to the markets. (Kylmänen 2015) Advising companies to acquire ecolabel, would be one potential service to a new environmental consult (Mähönen 2015). Quality and environmental issues are closely related and it is beneficial to be familiar with both (Kylmänen 2015). Many of the larger companies outsource their operations, including environmental sector (Vahanne 2015). Outsourcing in public sector may bring a lot of work (Grönlund 2015). In Sweden and other countries there is more demand for environmental consultants. (Runsten 2015)

It is important to develop new innovations, new services and methods e.g. in the field of circular economy (Minh 2015). Circular economy can bring also new customers for environmental consultants (Määttä 2015). The new updated proposal of the Commission on Circular Economy is expected by the end of year 2015. More emphasis has been put to the economic side and the need to see the whole picture instead of just focusing on environmental issues. In the longer run Circular economy would need the convergence of laws and all incoherencies of different policies should be removed. Shift to circular economy would need more cooperation between stakeholders. Changes in legislation cannot solely bring good results because the customers are in a key role when promoting circular economy. Circular economy should concentrate to change the big picture and the way of thinking in order to succeed. (Simola 2015) To achieve closed loops in companies there have to be investments to recycling. For many materials there is no demand for recycling be-

cause of high costs. (Phillips et al. 2013, 4) But currently resource prices are rising rapidly which is making more tempting to recycle resources (Potocnik 2014).

3 Market and competitor analysis

Knowing the competitors in the field of operation is highly important and many times it defines the success of the company. In this chapter objective of the competitor analysis is described and the results are presented. Also market situation in Finland is analysed.

3.1 Methods

Most of the data was gathered through interviews. There were three groups of interviewees: environmental consultants, governmental environmental officials and other environmental professionals. Consultants could be divided to independent consultants, SME's and big multinational consulting companies. Trough secondary data (webpages, etc.) the service base of the consultants was analysed and based on that potential interviewees were contacted.

3.2 Objective of the competitor analysis

Competitor analysis provides strategies to identify opportunities and threats. The offensive strategy allows firm to exploit opportunities and capitalize on strengths. As well as, the defensive strategy allows them to more effectively counter the threat posed by rival firms seeking to exploit the firm's own weaknesses. (Cuellar-Healey & Gomez 2013, 4.)

Czepiel & Kerin (2011, 22.) are stating that: *"Competitive marketing strategy requires that the strategist position the firm's offerings such that they minimize direct competition either by choosing vulnerable competitors or by putting strength against weakness".* According to Cuellar-Healey & Gomez (2013, 4.): *"Firms that develop systematic and advanced competitor profiling have a significant competitive advantage".*

Through competitor analysis aim is to: (Cuellar-Healey & Gomez 2013, 4.)

- identify key competitors and develop a profile for each of them
- identify competitors' objectives and strategies
- assess competitors' strengths and weaknesses
- estimate the threat competitors' are posing
- anticipate competitors' reaction to competitive moves

Identifying competitors for the analysis is not quite as simple as it might seem. We could only observe the firms satisfying similar demand or supplying similar products or services (Czepiel & Kerin 2011, 2.). Usually the firms focusing on the same target market with the same strategy are the closest competitors (Cuellar-Healey & Gomez 2013, 4.). However, the firm must pay attention also to potential future competitors and define their strategy according to that. There are three factors for identify the different competitors: (Czepiel & Kerin 2011, 2.)

1. areas of influence
2. areas close by
3. areas of interest

3.3 Environmental consulting market situation in Finland

Environmental consulting is diverse, broad and expanding sector (Pesonen 2015). There is an intense competition in Finland (Berninger 2015, Lilja 2015, Strandberg 2015), and the markets might be saturated (Lilja 2015). Even though the competition, there is a room for a new small actors in environmental consulting business in Finland. (Vahanne 2015, Pesonen 2015, Runsten 2015) But then consultant has to have something worth offering (Runsten 2015). Environmental consulting firms with specific knowledge may find customers, but in the same time companies who are preparing nature reports are not currently doing so well (Vahanne 2015). Some of the expert services what consultants are offering can be obtained cheaper or even free of charge from the public organizations. (Saaristo 2015) According to Grönlund (2015): *"There are players on the field who are pushing the prices down".* It is difficult to cope with environmental reports which are done unprofessionally and under normal price levels. Also general economic situation affects to the future of environmental consulting. (Vuorinen 2015) From the customers perspective service offer is good in the environmental consulting markets in Finland (Hirvelä 2015).

Environmental permit system requires from small companies expertise and even the big companies need environmental consultants for these tasks (Pesonen 2015). In the future legislation will be most likely simplified in Finland. Fewer companies will be obligated to apply environmental permits and environmental permits will be replaced with notification procedure. This requires more comprehensive project plans and most of the work will be done by consultants instead of regional or town environmental officials. (Strandberg 2015) Right now Finland has fallen behind in corporate social responsibility (CSR), more advanced examples can be found in Denmark or Sweden. (Törnroos 2015, Lukin 2015) Oth-

er Nordic countries are ahead of Finland in environmental issues (Lilja 2015). In Finland most consulting companies are small, so for them it is hard to expand to international markets and to participate in open international tendering. (Minh 2015) However there are also big projects available and it depends on strategic choices to concentrate on those; some of the projects are by International Financing Institution (IFI). Also mining projects in private sector in Finland are large scale environmental projects. But to get these projects its essential be able to supply the whole package, including engineering design and consulting. (Tyynismaa 2015)

3.4 Results of competitor analysis

In Finland there are three different types of environmental consulting companies. First there are few big consulting companies which are operating also internationally. These companies have practically similar service offer, but priority areas and target customers may differ. There are also big international companies which have only small market share in Finland and offer only few services. Based on the service offer in the consulting companies webpages service offers typically consist on following services:

- Polluted soil detection and remediation
- Water quality measurement and management
- Environmental Impact Assessments and statements
- Geological engineering
- Water supply, disposal and treatment
- Hydraulic/Water resources engineering
- Energy engineering/management
- Spatial/Landscape planning
- Waste management and recycling
- Environmental management systems
- Environmental legislation services and permits
- Liability, auditing and due diligence

Secondly there are SMEs, which are variable group of different kind of companies. Typically these companies are focused on a limited area in environmental consulting. SMEs can be more agile and flexible compare to big consulting companies. Some companies are doing their business on areas where big consultants are not involved yet. While other are concentrating on same areas with the big consultants. Both of these strategies may work and it can also lead to cooperation with big consulting companies. Big consultants

outsource their actions which are needed seldom, and in big projects they favour subcontracting.

Third group are individual consultants. These consultants have normally been working many years in private or public sector to gain a lot of knowledge, experience and valuable contacts. Individual consultants typically have specialization which they are handling very well. Therefore they are offering services which are focused to smaller area than other consulting companies. Individual consultants usually have lower operating costs, because office facilities and other fixed costs can be minimized.

According to the interviews individual consultants tend to see other consultants as partners more than competitors (Nissinen 2015, Määttä 2015). This is due to the fact that consultants are operating in many different fields of business (Nissinen 2015), and therefore are not competing same customers. Also many big consultants see individual consultants as partners. According to Lilja (2015): *"It is important to create network of reliable customers, like big consulting companies, who order services regularly".* Networking together with other small consultants with different expertise is beneficial (Lilja 2015). This how small consultants can offer a wider variety of services and getting bigger projects.

Big consulting firms are competitors with each other. SME's can be considered as competitors, partners or something between. (Grönlund 2015) Big consulting companies are buying more services from smaller consultants nowadays. Also big consulting companies are competing same customers with SME's in environmental consulting market; this makes the competition very intensive. (Määttä 2015). It also reflects that the possibilities for environmental consultants are limited, at least in Finland (Vahanne 2015).

4 Legislation analysis

As it was stated earlier, most of the job opportunities for the environmental consultant rise from compliance with the legislation. That why in this chapter the legislation and the future changes of the legislation are analysed. Also the most important environmental certifications are introduced briefly.

4.1 Methods

Interviews of the environmental professional gave the most information to this chapter. Some of the interviewees had done legal studies and others had a lot of experience of implicating the legislation. There are comments both from public and private sector. Also web pages like Finlex.fi and Edilex.fi clarified the general picture. The EU legislation is also handled because the changes there have a direct impact to the Finnish national legislation.

4.2 Environmental management systems and certifications

Acquiring environmental management system (EMS) is getting more important to the companies in all industries. Common slogan is: *"What gets measured also gets managed*" (EU 2014). The pressure from the clients motivates companies to use EMS. Many times companies who acquire EMS are also profiled as an ecological company. (Niinivaara 2015) EMS involves the policies and strategies of environmental protection, the disposal and recycle of the product, and the effective management process. (Yang et al. 2011, 1192.)

It is possible to use Porter's value-chain model to identify and locate the actions of EMS in a company (Figure 3.). Combining the environmental factors with the social and economic factors by creating a sustainability management system (SMS) could be an efficient tool for the local authorities and most probably also for the other organisations. (Emilsson & Hjelm 2009, 370.)

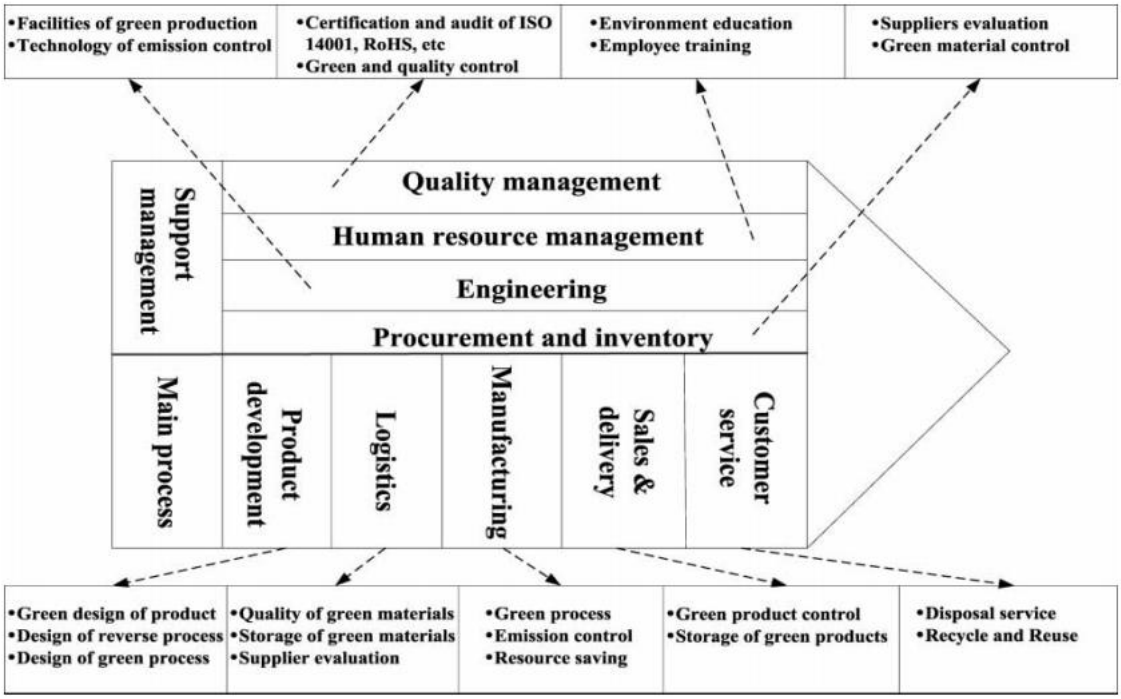

Figure 3. The environment management initiatives based on Porter's value-chain model (Yang et al. 2011, 1182.)

The majority of companies that adopt an EMS do not implement ISO 14001 certified EMS (Darnall & Kim 2012, 361.). All types of EMSs (certified, noncertified, complete, and incomplete) are creating reductions in the use of natural resources, solid waste, and global air pollutants. However, ISO 14001 certified EMS achieve greater environmental improvements over other types of EMSs. (Darnall & Kim 2012, 363.) Certification aspect of ISO 14001 may be the reason why the results are better than in noncertified EMSs (Darnall & Kim 2012, 361.). Institutional structure of ISO 14001 is expected to be the primary reason for these results; ISO 14001 requires a two-stage review process which include external auditor. (Darnall & Kim 2012, 362.) ISO 14001 follows: Plan - Do - Check - Act (PDCA) cycle, the core idea is in continuous improvement (Moen & Norman 2009).

- ✓ **Plan** - establish objectives and make plans
- ✓ **Do** - implement your plans
- ✓ **Check** - measure your results
- ✓ **Act** - correct and improve your plans and how you put them into practice

Normally EMS does offer a certificate to company, so it is possible to inform customers and other stakeholders. Companies are always interested how they can promote their environmental friendliness to their customers (Mähönen 2015). The most used EMS and certifications in Finland are the following:

- ISO 14001
- EMAS
- EMAS Easy
- EcoCompass
- WWF Green Office

In Finland ISO 14001 certification is considered to be the best and more important than EMAS (Törnroos 2015). Some of the organizations in Helsinki like: Helsinki harbour, Helen and Palmia have ISO 14001 standard (Lukin 2015). ISO 14001 does not necessary give competitive advantage, but you just have to have it to operate in certain industries (Hirvelä 2015). According to Tokola (2015) *"ISO 14001 has not so far offered much cost savings to the company, but the management of the waste streams has been better, this also gives a change to set more goals in the future".*

EcoCompass is an environmental management system for SMEs. It is lighter compare to ISO standards. It is used so far only in the capital area but there are plans to expand it to the other parts of Finland. (Niinivaara 2015, Lukin 2015) Stara, Library of Helsinki, Environmental centre of Helsinki and Public Works Department of Helsinki all have or will have EcoCompass (Lukin 2015). EcoCompass is used in also some of the organizations in Vantaa (Maidell-Munster 2015). All together there are 60 organizations which do use EcoCompass in Finland (Niinivaara 2015).

In addition there are certifications to constructions; two most known are (LEED) Leadership in Energy and Environmental Design and BREEAM (Building Research Establishment Environmental Assessment Methodology). Other industries like air transport have also launched their own certificate IATA Environmental Assessment (IEnvA). There was also one other EMS and certificate called EcoStart in Finland. EcoStart was launched by The Centre for Economic Development, Transport and the Environment (ELY Centre), but it was terminated apparently due to economic reasons. According to Potocnik, European Commissioner for Environment (2014): *"Today 48% of population does not believe in eco-labels",* this is also a matter of concern.

4.3 Environmental legislation in Finland

Finnish government has traditionally invested in long term environmental work (Koski-Vähälä 2015). But same time bureaucracy has slowed down the development of environmental sector in Finland. Festival speeches and reality do not always match. (Määttä

2015) EU legislation affects mostly to energy efficiency and climate related issues. (Lukin 2015) Europe and mostly EU shouldn't regulate itself to a bankruptcy. Also inconsistent decisions increase the burden in environmental management of the member states. (Räsänen 2015) Also the rigidity of permit processes makes it sometimes more difficult to adopt new more environmental friendly processes (Määttä 2015). Potocnik (2014), the European Commissioner for Environment stated that: "*The best player is the best only if there is a good referee and clear rules".* Nevertheless official guidance about environmental regulation needs interpretation occasionally (Määttä 2015). Edilex.fi, Finlex.fi or Expec.fi are a good way to get information about environmental legislation. There are lists of laws and requirements and useful information available through newsletters from Tukes, Motiva, HSY, EcoCompass or Uusiouutiset. (Niinivaara 2015)

New environmental laws are making more tasks for the companies (Pusa 2015, Kaivonen 2015, Heikkinen 2015), but not always require services from the consultant. (Kaivonen 2015) Many companies are not aware of the changes in legislation, and when changes happen they do not have time or resources to comply with legislation without the help of consultant. Consultants can offer solutions how companies can improve their processes and comply with the legislation. This is a change to enter to a market for a start-up environmental consultant. (Heikkinen 2015) Producer Responsibility Act makes it mandatory for a company to receive their old products (Saari 2015, Tokola 2015). Also other environmental regulations will be tighter in the future (Vahanne 2015, Peltonen 2015). It is desirable that the interpretation and application of the laws will become more uniform in Finland, now there are some regional differences (Vahanne 2015).

In the future legislation will be most likely simplified in Finland (Räsänen 2015, Strandberg 2015, Lilja 2015), and the amount of bureaucracy will be reduced (Mailammi 2015). The amount of stakeholders obliged to environmental permits is currently high in Finland, this and the new regulations from EU are making the system slow and stiff. Currently problem is that different government officials are doing similar task and the customer companies have to prepare many applications for a permit. Making the process more agile, the principle of a one-stop shop, may increase business opportunities and innovations (Räsänen 2015). Also contracts between the government and companies about environmental issues might happen more in the future, as a gesture of common responsibility. (Lilja 2015)

If the number of stakeholders obliged to the environmental permits will be decreased, risk management actions are recommended (Rantakokko 2015). Fewer stakeholders obliged to environmental permits may lead to problems in subsequent control, which is a responsibility of the municipalities (Kyttälä 2015). Legislation will define environmental consult-

ants' way to work in the future (Nissinen 2015). Even though permit process would be lighter, all the environmental reports must be done as professional as before, and this creates jobs for environmental consultants. (Räsänen 2015) According to the Environmental Protection Act, following actions and business sectors require environmental permits (Finlex 2015):

1) Forest industry
2) Metal industry
3) Energy production
4) Chemical industry
5) Manufacturing of fuels, or the storage or processing of chemicals or fuel
6) Activities using organic solvents
7) Excavation of ores or minerals or other ground resources
8) Manufacture of mineral products
9) Production or handling of leather or textiles in facility extend
10) Manufacturing of food or feed
11) Animal shelters or fish farming:
12) Transport
13) Treatment of waste and wastewater professionally or in facility extend
14) Other activities (eg. fertilizer factory, exploration drilling of oil and gas)

Environmental legislation is important to know, even though it takes time and effort (Määttä 2015). There are various environmental laws dealing with environmental issues (Räsänen 2015). Major environmental laws (Environmental Protection Act, Water Act and Waste Act) are renewed recently, and Environmental Protection Degree is still changing (Levonmaa 2015). Energy Efficiency Act entered into force in Finland at the end of year 2014 (Parkkinen 2015). The needed legislation depends greatly the specific field of operation of environmental consultant. There are changes case by case basis and also municipalities own regulations can vary. (Runsten 2015) Most of the customer companies have task related to Waste Act and Energy Efficiency Act (Mähönen 2015). In appendix 5 there is a list of most laws and degrees related to the environmental consultants' activities. Legislation about the environmental issues has divided to a wide variety of laws and regulations.

Maybe the most important laws are dealing with environmental permit process (Räsänen 2015, Törnroos 2015, Minh 2015). EIA legislation and processes are important to know, as well as legislation dealing with emission limits (Minh 2015). Also Waste Act and Waste Tax Act are one of the important laws to know. In addition to what is written in the law it is

good to know the meaning and true spirit of the law. (Strandberg 2015) International legislation cannot be ignored either (Minh 2015). New laws are coming constantly and it is important to know what is happening. (Törnroos 2015) In big environmental consulting companies only small part of the workers are dealing with environmental legislation (Grönlund 2015).

5 Customer analysis

For any company it is crucial to know the customers and particularly the needs of the customers. Therefore this chapter deals with the customers of environmental consultants. It is said before that there are three different customer groups: private sector customers, public-sector customers and non-profit organizations (NGO's). However it is not that simple because some of the other consulting companies can also be customers. Especially for individual consultants the big consulting companies represent as a potential customer group.

5.1 Methods

Interviews were the method to collect information about the customers. Some of the interviewees were working in organizations which could be stated as partly private and partly public. Five of the interviewees were directly working in a public sector and ten in private companies which could be potential customers. Also non-profit organizations (NGO's) were contacted, but no interviews were done. In addition some environmental consultants had also valuable comments about the customers.

5.2 Public sector customers

If we compare customers from private and public sector, it is evident that in the private sector decisions are done much faster than in the public sector. (Meriluoto 2015, Minh 2015) Public sector customers have less money to spend but the projects are big, compare to the private sector where customers have more money to spend but the projects are usually small (Runsten 2015). In public sector there are tighter tendering competitions than in private sector (Strandberg 2015, Minh 2015). In some municipalities competitive tendering is many times seen too challenging and it may lead to the cancellation of the whole project (Kyttälä 2015).

Preparing tasks in the ELY-centre can be done by environmental consultants (Rantakokko 2015), also most of the municipalities do use the services of environmental consultants. Most of the environmental consultants are working with municipalities' environmental officials trough clients' environmental permit processes (Levonmaa 2015). Number of own workers and the financing are in the key role when talking about buying environmental consulting services to ELY-centre. The recent trend has been the reduction of workers, but also some of the duties are removed. ELY-centre does competitive bidding of consult-

ants every 4 years. (Rantakokko 2015) City of Helsinki does use the services from big consulting companies, SME's and individual consultants (Lukin 2015). In the town of Lempäälä big consultant companies have been used in big projects, while from other projects there are experiences also from smaller consultants (Levonmaa 2015).

City of Vantaa does use services from environmental consultants mainly in contaminated soil investigations and remediation planning, noise and nature studies. In nature studies small and in noise studies big consultants are used. (Maidell-Munster 2015) In ELY-centre planning and construction task are currently outsourced, but in the future also sampling and monitoring will be outsourced (Rantakokko 2015). Also in the town of Lempäälä the sampling and most of the reports in town planning are outsourced; also some of the sustainable development issues were outsourced before (Levonmaa 2015).

Price and quality are the most important selection criteria for consultants (Maidell-Munster 2015). Town planning and construction departments are using big part of the consultant services in municipality (Levonmaa 2015, Kyttälä 2015).There are also possibilities for in house consulting in ELY-centre. It means that consultant uses the facilities of the customer and then communication with consultant is more efficient. (Rantakokko 2015) There are good experiences about in house consulting for example in the town of Sipoo (Kyttälä 2015).

5.3 Private sector customers

During the last ten years there have happened significant changes how environmental issues are taken care in the companies (Kaivonen 2015). Now environmental issues are not only dealt in one separate department, but every department has to involucrate environmental issues in their actions (Parkkinen 2015, Kaivonen 2015). Currently big companies also in Finland have their environmental management systems in shape (Parkkinen 2015). Taking care of environmental issues in the company is important to gain competitive advantage (Saari 2015, Kaivonen 2015, Sihvo 2015). Also cooperation with different organizations and universities is useful in environmental issues. (Kaivonen 2015)

Customers from private sector are not always more simple than the ones from public sector. Big international projects need a lot of preparation and work. (Grönlund 2015) But with private sector customers there are more possibilities to bring in your own knowledge and views to solve the problem and there is less bureaucracy compared to the public sector

(Minh 2015). Many times SME's and big companies do require different kind of services from environmental consultant. (Niinivaara 2015)

Selection criteria for consultants depend on the project, but generally big consulting companies are used because of their wider expertise and references (Kaivonen 2015, Saari 2015). Most of the big projects are bought from big consultants (Pusa 2015, Koski-Vähälä 2015), but in some companies there is no preference between different size environmental consulting companies. (Meckelborg 2015, Pelttari 2015, Pusa 2015) If there is an existing cooperation with the consulting company it often leads to cooperation also in environmental consulting sector (Saari 2015). Price, quality and level of service level define the consultant selection (Meckelborg 2015, Parkkinen 2015, Pelttari 2015). But finally consultants are chosen based on the need of the company. Tailored services are always desired by customer. Many times consultants are bringing new perspective, because they have been working in many different places, this also helps to obtain latest BAT's. (Hirvelä 2015)

Some companies have not used that many environmental consultants, often the know-how can be found inside the company. For example environmental strategies are possible to do inside the company. (Parkkinen 2015) In many companies there are not people who are solely working with environmental issues. Often quality and environmental issues are done by same person in the company. Tasks related to company's core business area consultants are not used, in order to keep the control inside the company (Hirvelä 2015). Also if there is an existing partner, there is normally no need for other consultants (Saari 2015, Tokola 2015). But the tendency is that more functions are being outsourced (Saari 2015). In many companies there are not working that many people with environmental related education and there are positive experiences about using environmental consultants (Pusa 2015). Typically consultants are used when company needs special information what cannot be found inside the company (Hirvelä 2015).

Environmental consultant should study what the company is doing and invent new and better solutions for which company is not aware (Parkkinen 2015). Precise consulting services have a lot of demand. Environmental consultant is normally taking care of new environmental issues which need special knowledge. (Saari 2015) Energy efficiency issues and especially energy efficiency of real estates, is one of the services needed from environmental consultants (Parkkinen 2015). Environmental legislation poses challenges for companies and consultants are used to make sure that company's operations comply with the environmental laws (Tokola 2015). There are also legislation services which informs changes in environmental legislation (Sihvo 2015). Environmental consultants are used in

polluted soil reports, collecting water samples and some risk assessments (Sihvo 2015), and project management tasks (Pusa 2015). There are good experiences about in house consulting (Sihvo 2015), but in the area of environmental consulting it is not used so much (Hirvelä 2015, Kaivonen 2015, Saari 2015).

Many of the companies have done a lot of work to be more environmentally sustainable. There are also many professional organizations like The Finnish Food and Drink Industries' Federation (ETL) and International Air Transport Association (IATA), where environmental issues have taken into account (Hirvelä 2015). Here a list of most common environmental actions made by the interviewed companies:

- Maintaining environmental policy and strategy
- EHS policy and auditing
- Maintaining EMS
- Yearly reporting
- Place environmental, SCM and procurement responsible in charge
- Mapping the environmental impact of procurement and SMC
- Mapping online shopping abilities and ecological delivery options
- Identifying environmental risks
- Setting the indicators by GRI
- Setting goals
- Doing auditions
- Emission calculations
- Carbon footprint calculations
- LCA calculations
- Fuel usage calculations
- Buying emission permits
- Using renewable energy and low emission transport
- Reverse logistic actions and optimized transport
- Training and encourage suppliers in environmental practices
- Development programs about environmental responsibility

6 Service catalogue

In this chapter a service catalogue for an environmental consulting start-up is introduced and explained. This particular service catalogue defines the services for Ekopaja Consulting.

6.1 Introduction to selected service catalogue

Services are chosen based on the result from all the information gathered during the thesis process. Idea is to choose services which follow the current and predicted trends in the Finnish environmental consulting markets. One significant factor is author's personal knowledge and experience. Also the service offer of the competitors and the needs of potential customers are considered. Idea is to elect services which are best suited for Ekopaja Consulting. Aim is to concentrate business on areas where big consulting companies are not so significant actor yet, or where big consulting companies outsource their actions. Some of the services selected to the catalogue may need some further courses or education. Selection is done based on authors own analysis and reasoning.

As defined before a service catalogue is a list of services that company provides to its customers. This service catalogue describes the service to customers and the results can be used inside the company as a guidebook. Particular services are estimated in all the four main categories, recommended services are underlined and further information is given in bullet points. There are also justification and arguments which explain why these services are selected. Also some of the services can be monitored for now and maybe later added to a service catalogue. This is a service catalogue for an individual consultant, so it is beneficial to choose only a few services and reach for high quality.

6.2 A service catalogue for an environmental consulting start-up

Environmental/ Quality/ Risk management systems:

Combined environmental, quality and risk management consulting in one package

- Target customers are Finnish SMEs from one or more separate industry, later it is possible to expand to different industry areas and locations.
- Service level can be defined separately for every customer. The simplest it could be just advising but depending on the customer it could be extended as a full scale EMS with certificate.
- Responsible procurement and the guidance of acquiring and using ERP software could be considered as additional services.
- Material and energy efficiency actions could be also considered as additional services.

This service would be first considered to one specific field of industry which is fast and easy to dominate and then gradually expanded to other while experience is growing. ISO 9001 and ISO 14001 standards are renewed in year 2015. These new standards will have some risk management aspects from ISO 31000. This is a change to enter to a market for a start-up environmental consultant. It is beneficial to concentrate to SMEs because most of the big companies already have EMS. Package which combines environmental, quality and risk issues might be easier to market to the customers who may not be so convinced solely about environmental issues. ERP systems have revolutionized the procurement in most of the big companies and now it would be possible to do same thing with SMEs. Material and energy efficiency have all the time growing importance and demand. More experiences should be acquired from material efficiency analysis and energy efficiency calculations in order to offer better services. By offering the best available service to customers, it gives an opportunity to expand cooperation also to other areas.

Circular economy applications and material efficiency

Circular economy is one of the most promising new ideas in the field of environmental consulting. There is not yet clear idea how to capitalize it, but according to studies the worth of circular economy could be as much as USD 700 billion in global consumer goods markets only dealing with food, beverages, textiles, and packaging (Ellen MacArthur Foundation 2015).

Even though it would be impossible to offer services related to circular economy just now, it is wise to follow the situation. Industrial symbiosis, reverse logistics and developing new business models to companies (Selling service and performance instead of products) can offer a lot of business opportunities to environmental consulting start-up in the future.

Development cooperation consulting in environmental field

Decreasing funds of Finland bilateral development cooperation is a clear threat to development consulting. Currently development consulting does not look like a promising field of business for environmental consulting start-up. Opportunities can be found from other donors such as the EU, World Bank and other regional banks like the ADB and AfDB. It would be important to maintain the knowledge from development consulting, because the situation may change in the future. Outside Finland there is generally more demand and opportunities for environmental consultants.

Other environmental project plans, studies and research services

<u>Storm water management plans, Water protection plans and Reports related to GIS</u>

- Target customers are municipalities town planning departments, water protection associations and big environmental consulting companies
- Service level can be defined separately for every customer.

Big consultants outsource the actions which are needed seldom, and in big projects they favour subcontracting. Especially for individual consultants the big consulting companies represent as a potential customer group. In public sector there is trend for more outsourcing which might open working abilities for environmental consulting start-up.

7 Discussion

This chapter collects key outcomes and make conclusion about the research process. Also recommendations are given about the further studies and the whole project is evaluated to determine what worked well and what could be done better in the future.

7.1 Conclusions and key outcomes

Customers need to know what, how and why before they are convinced to implement environmentally sustainable projects. The main motivator for companies to invest environmentally sustainable projects is complying with the laws and regulations. This makes environmental consultant to operate between environmental regulation and the customer. Many companies are not aware of the changes in legislation, and when changes happen they do not have time or resources to comply with legislation without the help of consultant. Probably fewer companies will be obligated to apply environmental permits in the future and environmental permits will be replaced with notification procedure in Finland.

Working as an individual consultant requires a wide range of skills and suitable personal characteristics. With concrete examples it is easier to persuade customer. Consultant should have own area of expertise which to know better than the rest, or product which stands out from the mass. The major threat for the consultant is lack of innovating new services, without innovations consultant drifts to compete only on price. Development consulting depends greatly on variable governmental funding. Better opportunities can be found trough other donors. Internationally there is more demand for environmental consultants than in Finland.

Even though the tight competition, there is room for new small actors, with specific knowledge, in environmental consulting business in Finland. The recommended services for an environmental consulting start-up are combined environmental, quality and risk management consulting services in one package for SMEs, including additional services such as responsible procurement with ERP as well as material and energy efficiency actions. ISO 9001 and ISO 14001 standards are renewed during year 2015 and these have a lot of potential. Many of the larger companies and public sector outsource their environmental sector operations. In public sector complicated tendering process is a drawback. Consultants can offer solutions how companies can improve their processes and comply with the legislation. Environmental consultant should study what the customer company is doing and invent new and better solutions for which company is not aware. Networking together with other small consultants with different expertise is beneficial.

7.2 Recommendations and further studies

Further studies should always be based on clear needs. If the Ekopaja Consulting start-up will be expanding, there is definitely a demand for new studies and development of methods and practices like:

- Marketing and sales skills development
- Simplifying or outsourcing administration tasks
- Deep analysis about Finnish environmental consulting markets
- Potential partners should be identified and explore possibilities for joint ventures
- Monitoring of EU legislation for possible changes
- Identify the needs of more customers groups
- Constant RDI process to invent new and better solutions

If we talk about big picture how the environmental issues are handled currently around the world, there are many recommendations to be given. There are a lot of inefficiencies around us, we should keep improving processes, design and supply chains (EU 2014, Potocnik 2014). As Potocnik (2014) states: *Ignoring environmental protection today will decrease economic development in the future".* Circular economy give solutions like industrial ecology, reverse logistics and encourage moving from selling to renting (EU 2014). Share, lease, rent but not buy and but do not own (Potocnik 2014). According to Rau (2013): *"Consumer shouldn't pay raw materials, but only the performance".* Raw material content info should be visible in products in order to speed up recycling (Rau 2013).

7.3 Evaluating the project work, research and learning

Thesis project started with "Thesis planning workshop course", it worked well and helped a lot of selecting the thesis topic. It was useful to be able to start writing already during the course; otherwise the content of the course would not be that useful. During the course thesis plan was produced, which basically is the first chapter of the final thesis. One part of the thesis plan was to great GANTT time chart for thesis project. Interview process was extended from the original plan, but the whole process was still staying inside original time frame. Summer vacations postponed the advising and assessment around three months.

Research process started with moderate literary review. It was challenging to find environmental related articles from the Haaga-Helia library and the other online databases.

Maybe the best sources were found trough web search engines. The emphasis was on the latest publications to get up date information. Using greater amount of sources would have given more reliable results, but in given time frame the amount of the sources is considered sufficient.

Two months of the time was used to contact people and to do interviews about environmental issues. Interviews were giving a lot of information which couldn't be obtained from the literature. People who have worked in environmental sector many years can give a new perspective to thesis and a lot of good ideas. It is also good to know people from the environmental sector to build network and get more information about future working abilities.

What was really positive about the thesis process was that so many of the contacted people were willing to participate and spend their time. All together 51 environmental consultants, professionals and officials were contacted, and 29 (57%) of them were interviewed. It was much more difficult to get interviews from customer companies. 25 companies were contacted and only 10 (40%) of them were interviewed. It is easy to see from the numbers that private companies were less willing to participate. Companies had sometimes difficulties to know who is responsible about the environmental issues. It seemed that the companies were constantly busy and lacking resources. In the other hand some of the companies stood out from crowd and had their environmental issues managed excellently.

Writing process was done in two phases. The first chapter and most of the results of literature review was written first before interviews. During the interviews data was collected and rephrased but not written to final format. Only after all the data was collected from the interviews the major writing process started. This process worked well and it was most probably the least time consuming method. In the end the text was read by thesis advisor and some recommendations were given to improve the final result. Also language check was done by English teacher from the Haaga-Helia.

To be able to finish thesis it is one big learning process. In this particular thesis many new issues were handled and learning was definitely happening. Personally it was interesting to know about environmental consulting markets in Finland and to see if there is room for new actors. Many tips were received how to succeed in the beginning of entrepreneur career. There are also specific personal characteristics what are needed for entrepreneur. Environmental legislation is wide field of different regulations and it is wise to concentrate only on certain area of it. Getting to know competitors and potential customers was maybe

the most important thing in the whole thesis. Also the writing process in English improved language skills, which are definitely needed in the future.

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Appendices:

Appendix 1. GANTT time chart for thesis project

Thesis Activities tihechart (GANTT)		Calendar weeks, year 2015																							
No. TASK	No. SUBTASK	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24								
1 Researching about the environmental consulting as a business; its characteristics, current and future possibilities																									
	1.1 Finding material	X	X	X	X	X	X																		
	1.2 Reading material		X	X	X	X	X	X																	
	1.3 Writing the Introduction		X	X	X	X	X	X																	
2 Researching existing environmental consulting companies and their services																									
	2.1 Finding companies		X	X	X	X																			
	2.2 Researching companies and their services			X	X	X	X																		
	2.3 Analyzing companies and their services				X	X	X	X																	
	2.4 Writing the Competitor analysis				X	X	X	X																	
3 Researching current and upcoming environmental legislation in national and EU level																									
	3.1 Finding material					X	X	X	X																
	3.2 Reading material						X	X	X	X															
	3.3 Writing the Legislation analysis						X	X	X	X															
4 Executing market research for potential customers to identify their need for services																									
	5.1 Planning the questionnaire				X	X	X	X																	
	5.2 Conducting interviews							X	X	X	X														
5 Service catalogue																									
	6.1 Writing final service catalogue											X	X	X	X	X	X								
Presenting thesis										X															
Project evaluation															X	X	X								

Appendix 2. Preliminary list of environmental consulting services and subsectors

- Air quality, CO_2 measurement, management and reduction
- Polluted soil detection and remediation
- Water quality measurement and management
- Noise and vibration assessment and reduction
- Toxicology and testing services
- Environmental Impact Assessments and statements

- Geological engineering
- Water supply, disposal and treatment
- Hydraulic and water resources engineering
- Chemical engineering and management
- Energy engineering and management
- Spatial and landscape planning
- Waste management and recycling

- Environmental management systems
- Environmental project plans, studies and research services
- Industrial ecology and circular economy
- LCA, BATS's, BMP's, innovations and new technologies

- Environmental legislation services and permits
- Environmental risk management
- Policy, permits, compliance and government relations
- Certification, assurance, eco labelling and CSR
- Reporting, communications, reputation management and branding
- Liability, auditing and due diligence
- Training and competence building
- Information solutions and data management

Appendix 3. Questionnaire for environmental consultants' interviews

(English/Finnish)

Qualitative Interview Frame - Environmental consultants		
Topic	Questions	Additional questions
Warming up	How did you end up to be an environmental consultant?	What have you been studying?
	Have you ever been interviewed about environmental issues?	Who? Why?
Environmental consulting	How do you see environmental consulting as a business?	Are there some special characteristics compare to other businesses?
		What kind of knowledge do you need in the business?
		Are the markets in Finland saturated or are there room for new players?
		What are the average hourly charge/ salary for environmental consultant?
	How do you see the future of environmental consulting?	What are the possibilities and threats?
		Will the service offer and customers change in the future?
Competitor analysis	Who are your biggest competitors?	Does their service offer differ from yours?
		Are consultants, SME's or big consulting companies your competitors?
		Do you do benchmarking?
Legislation analysis	How important it is to know about environmental legislation?	What are the most important laws and regulations in EU and Finland?
		How big part of the business is dealing with environmental legislation?
	How the environmental legislation will be changed in the future?	How big role EU has? How well directives are adapted to Finnish legislation?
		Do you think that the legislation will bring you more tasks in the future?
Customer analysis	Who are your biggest customers?	What services do you offer?
		Are there some new potential customers in the market?
	How customers from private and public sector differ from each other?	Are there different ways of working?
		What are the services needed?
		Is it more efficient to have private or public customers?
Development ideas	What kind of knowledge would be useful in the future?	What kind of employees are you looking for?
		Are there available jobs in your company?
Additional comments	Do you have any comments or questions to add?	Do you want to talk more about some of the topics?
		Were the questions difficult to answer?
		Can you be contacted in the future about environmental related issues?

Laadullinen haastattelukehys - Ympäristökonsultit		
Aihe	Kysymykset	Lisäkysymykset
Lämmittely	Kuinka päädyit ympäristökonsultiksi?	Mikä on koulutustaustasi?
	Onko teitä haastateltu aiemmin ympäristöasioista?	Kuka? Miksi?
Ympäristö-konsultointi	Minkälaisena liiketoiminnan alana pidätte ympäristökonsultointia?	Onko ympäristökonsultoinnissa joitain erikoispiirteitä verrattuna toisiin liiketoiminta-aloihin?
		Minkälaisia tietoja ja taitoja tarvitaan alalla?
		Onko Suomen ympäristökonsultointi markkinoilla tilaa uusille toimijoille?
		Mikä on keskimääräinen tuntilaskutus ympäristökonsultille?
	Minkälaisena näette ympäristökonsultoinnin tulevaisuuden?	Mitkä ovat uhat ja mahdollisuudet?
		Tulevatko palvelut ja asiakas ryhmät muuttumaan tulevaisuudessa?
Kilpailija-analyysi	Mitkä/Ketkä ovat tärkeimpiä kilpailijoitanne?	Eroaako heidän palveluntarjontansa teidän vastaavasta?
		Ovatko yksittäiset konsultit, pienet ja keskisuuret yritykset vai suuret yritykset kilpailijoitanne?
		Teettekö vertailuanalyysejä (benchmarking)?
Lainsäädäntö-analyysi	Kuinka tärkeää on tuntea ympäristölainsäädäntö?	Mitkä ovat tärkeimmät lait tuntea EU:ssa ja Suomessa?
		Kuinka suuri osa liiketoiminnasta käsittelee ympäristölainsäädäntöä?
	Miten ympäristölainsäädäntö tulee muuttumaan tulevaisuudessa?	Kuinka suuri rooli EU:lla on? Kuinka hyvin direktiivit on sulautettu Suomen lainsäädäntöön?
		Uskotteko että ympäristölainsäädäntö tulee tuomaan lisää työtehtäviä teille tulevaisuudessa?
Asiakas-analyysi	Ketkä ovat tärkeimpiä asiakkaitanne?	Mitä palveluita tarjoatte asiakkaille?
		Onko markkinoilla potentiaalisia uusia asiakkaita?
	Miten asiakkaat yksityiseltä ja julkiselta sektorilta eroavat toisistaan?	Palvellaanko asiakkaita eri tavalla?
		Mitkä ovat tarvittavat palvelut?
		Onko edullisempaa hankkia asiakkaita yksityiseltä vai julkiselta sektorilta?
Kehitysideat	Minkälainen tietotaito on hyödyllistä tulevaisuudessa?	Minkälaisia työntekijöitä etsitte?
		Onko yrityksessänne avoimia työpaikkoja?
Lisä-kommentteja	Onko teillä mitään kysymyksiä tai kommentteja?	Haluatteko palata johonkin aiheeseen?
		Olivatko kysymykset vaikeita?
		Voidaanko teihin olla yhteydessä tulevaisuudessa koskien ympäristöasioita?

Appendix 4. Questionnaire for potential customer interviews (English/Finnish)

Qualitative Interview Frame - Customer companies/organizations		
Topic	Questions	Additional questions
Warming up	Do you have interest in environmental issues?	In what areas particularly?
	Have you ever been interviewed about environmental issues?	Who? Why?
Current situation	How is your company/organization in contact with environmental issues?	Are your operations dealing with water, wastewater, waste management or recycling?
		Do you use LCA, BMP's or new innovations and technologies?
		Do you need environmental permits in your business?
	Do you have environmental policy or environmental management system?	If not, why?
		Do you have internal/external auditor?
		How do you manage environmental risks?
		How about your competitors?
	Do you have environmental certifications, eco labels or CSR report?	If not, why?
		Are you conscious about your reputation in environmental issues?
		Are your employees committed to continuous improvement?
		How about your competitors?
Outsourcing	Does your company/organization have enough resources to do all necessary tasks in environmental sector?	Would it be better solution to outsource some of the tasks?
	Have you outsourced some of the environmental related task?	What kind of experiences do you have about outsourcing?
		How have you chosen the outsourcing company?
		What kind of tasks have you outsourced?
	What you expect from outsourcing company?	Do you prefer consultants, SME's or big consulting companies?
		What you think about price level of environmental services?
Legislation	Do you have knowledge about environmental legislation?	Are there challenges to follow all the changes in legislation?
		Do you think that the legislation will bring you more tasks in the future?
Development ideas	What kind of services you would like to get?	EMS, Environmental project plans, studies and research services or other?
	Are you interested to rent environmental consultant to your company/organization?	For how long time?
	How much are you willing to pay from environmental consulting services?	€/hour?
Additional comments	Do you have any comments or questions to add?	Do you want to talk more about some of the topics?
		Were the questions difficult to answer?

Laadullinen haastattelukehys - Asiakasyhtiöt ja organisaatiot		
Aihe	Kysymykset	Lisäkysymykset
Lämmittely	Kiinnostavatko ympäristöasiat teitä?	Mitkä erityisesti?
	Onko teitä haastateltu aikaisemmin ympäristöasioista?	Kuka? Miksi?
Nykytilanne	Kuinka teidän yritys/organisaation on yhteydessä ympäristöasioihin?	Käsittelettekövesi, jätevesi, jätehuolto tai kierrätys- asioita?
		Käytättekö LCA metodeja, BMP tai muita uusia innovaatioita?
		Tarvitsetteko ympäristölupia toiminnassanne?
	Onko teillä ympäristöpolitiikka tai ympäristöohjelma?	Jos ei, niin miksi?
		Onko teillä sisäinen/ulkoinen auditoija?
		Kuinka hallitsette ympäristöriskejä?
		Entä kilpailijanne?
	Onko teillä ympäristösertifikaatteja, -merkkejä tai yritysvastuuraporttia	Jos ei, niin miksi?
		Oletteko tietoisia maineestanne ympäristöasioissa?
		Ovatko työntekijänne sitoutuneet jatkuvaan parantamiseen?
		Entä kilpailijanne?
Ulkoistaminen	Onko yrityksellänne/organisaatiollanne tarpeeksi resursseja ympäristöasioiden hoitamiseen?	Olisiko parempi ulkoistaa joitain tehtäviä?
	Oletteko jo ulkoistaneet joitain tehtäviä?	Minkälaisia kokemuksia teillä on ulkoistamisesta?
		Miten valitsette yrityksen jolla teetätte palveluita?
		Minkälaisia tehtäviä olette ulkoistaneet?
	Mitä odotatte yritykseltä, jolla teetätte palveluita?	Suositteko yksittäisiä konsultteja, pieniä ja keskisuuria vai suuria yrityksiä?
		Mitä mieltä olette ympäristökonsultoinnin hintatasosta?
Lainsäädäntö	Onko teillä tietoa ympäristölainsäädännöstä?	Onko teillä vaikeuksia seurata koko lainsäädäntöä?
		Uskotteko että lainsäädäntö aiheuttaa teille lisää tehtäviä tulevaisuudessa?
Kehitysideoita	Minkälaisia palveluita haluisitte saada?	Ympäristöjohtamis- suunnitelmia, Projektisuunnitelmia, tutkimuksia vai joitain muita palveluja?
	Oletteko kiinnostuneita vuokraamaan ympäristökonsultin yritykseenne/organisaatioonne?	Kuinka pitkäksi aikaa kerrallaan?
	Paljonko olette valmiita maksamaan ympäristökonsultointipalveluista?	€/tunti?
Lisäkommentteja	Onko teillä lisäkysymyksiä?	Haluatteko palata johonkin aiheeseen?
		Oliko kysymyksiin vaikea vastata?

Appendix 5. Preliminary list of laws and degrees related to the environmental consultant's activities in Finland

- Environmental Protection Act and Degree
- Water Act and Degree
- Waste Act and Degree
- The Forest Act
- Nature Conservation Act
- Wilderness Act
- Mining Act
- Land Use and Building Act (+ regional regulations)
- Land Extraction Impact Act and Degree

- Chemical Act and Degree
- Regulation on Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) Act
- Energy Efficiency Act
- Waste Tax Act
- Act on the handling safety of dangerous chemicals and explosives
- Government Decree on packaging and packaging waste
- Trade and Industry Ministry Decree of the monitoring and reporting of carbon dioxide emissions

- Environmental Impact Assessment (EIA) Act and Degree
- Act on Compensation for Environmental Damage
- Act on air transport emissions trading
- Producer Responsibility Act
- Public Procurement Act
- Terrain Traffic Act
- Water Traffic Act